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June 1, 2017

OMRON, RIKEN Agree to Set up RBOmC, Cooperate in Comprehensive Collaboration

- Launching Research on Fusion of AI & Brain Science to Help Humans, Machines Evolve in Society -

The OMRON Corporation and RIKEN agreed to set up the RIKEN BSI-Omron Collaboration Center (hereinafter RBOmC) within the RIKEN Brain Science Institute (hereinafter RIKEN BSI) on June 1, 2017.

The center will conduct research based on a fusion of brain science and artificial intelligence (AI) to help humans and machines evolve together in society. The research project is aimed at developing next generation technology fusing brain science and AI by elucidating the relationship between brain activity and people's physical conditions such as physical health and cognition as well as that between brain activity and people's mental conditions such as emotions and will.

OMRON and RIKEN signed an agreement on cooperation for deepening industrial collaboration and established a RIKEN-Omron collaboration committee with the goal of addressing further social challenges. The two entities are determined to strengthen their comprehensive collaboration and consider research projects that will contribute to creating a better society.

OMRON has long followed its founder Kazuma Tateishi's philosophy of leaving what machines can do to machines and allowing people to enjoy activities in more creative fields. Based on this philosophy, OMRON has contributed to creating a better society since its founding by supplying human-oriented automation technologies.

In recent years, the human-machine relationship has undergone drastic changes as a result of technological innovation such as IoT, AI and robotics.

OMRON believes that the human-machine relationship has three stages -- "substituting," "cooperation" and "integration," and developed technologies with the goal of achieving a world in which machines can inspire people's abilities and creativity and people can get along with machines.
The newly established RBOmC will combine "brain science" and "AI based on brain science" that RIKEN accumulated, and OMRON's core technology; "Sensing & Control + Think." With this synergy, we aim to develop next-generation technologies that will ensure that people flourish with machines, further advance brain science and address social issues.

Overview of RBOmC
Director: Tomoki Fukai
Senior Team Leader,
Laboratory for Neural Circuit Theory
RIKEN Brain Science Institute
Location: 2-1, Hirosawa, Wako, Saitama Prefecture
Period: June 1, 2017 - March 31, 2022
No. of members: seven from OMRON, 18 from RIKEN (including those who also hold other posts)

Next-generation technologies RBOmC is striving to develop:
- Technology allowing machines to understand individuals' conditions and characteristics.
- Technology allowing machines to provide feedback to people depending on individuals' conditions and characteristics.
- Technology allowing machines to control other machines in an optimal way depending on individuals'

conditions and characteristics.

Expected examples of applying research outcome:
- Manufacturing: Application of research outcome to technology that will help make up for a shortage of skilled technicians and improve productivity by shortening the time required for less experienced workers to acquire skills.
- Healthcare: Application of research outcome to early discovery of dementia and depression and treatments of patients.
- Mobility: Application of research outcome to reductions in the number of car accidents caused by drivers, such as by preventing drowsiness, as well as to technology of automated driving.

Overview of comprehensive collaboration
Purpose: Effectively and efficiently promoting OMRON-RIKEN collaboration.
Period: June 1, 2017 - March 31, 2018 (The period can be extended depending on agreement between the two parties.)

About OMRON Corporation
OMRON Corporation is a global leader in the field of automation based on its core technology of Sensing & Control + Think. OMRON's business fields cover a broad spectrum, ranging from industrial automation and electronic components to automotive electronic components, social infrastructure systems, healthcare, and environmental solutions. Established in 1933, OMRON has over 36,000 employees worldwide, working to provide products and services in more than 110 countries and regions. In the field of industrial automation, OMRON supports manufacturing innovation by providing advanced automation technologies and products, as well as through extensive customer support, to help create a better society. For further information, please visit OMRON's website at: http://www.omron.com/

About the RIKEN Brain Science Institute (BSI)
The RIKEN Brain Science Institute was founded in October 1997. The institute has gathered excellent researchers from Japan and overseas and been conducting comprehensive research as Japan's key research facility on brain science. Since its founding, RIKEN BSI has produced excellent research results and developed human resources, earning an international reputation as one of the world's best brain science research facilities. RIKEN BSI engages in interdisciplinary and collaborative research ranging from microscopic-level molecular mechanism, neuron cells, neural circuits and macroscopic-level phenomena such as cognition, memory and learning systems. Moreover, it conducts research on individual organisms, behaviors and social phenomena including language acquisition, brain and computation through theories and experiments by taking advantage of its knowledge in medicine, biology, physics, engineering, information science, mathematical science, psychology and other fields.

About RIKEN Cluster for Industry Partnership (CIP)
The RIKEN Cluster for Industry Partnership (CIP) takes advantage of its comprehensive ability and intellectual property to understand scientific and technological needs in society, help strengthen its collaborations with the industrial world and effectively and efficiently develop innovative technologies, through its project development and information dissemination activities. As part of its mission, CIP has launched the "Baton Zone" program, under which companies and RIKEN closely collaborate throughout research and development processes -- from basic research to practical research. RIKEN also has offered various other systems to jointly conduct research with the industrial world.

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